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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,191	12/12/2005	Shigeto Okada	133.0011	6289

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EXAMINER

WILLS, MONIQUE M

ART UNIT PAPER NUMBER

1745

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/531,191

Applicant(s)

OKADA ET AL.

Examiner

Monique M. Wills

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 4 & 5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on a multiple dependent claim. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohzaki et al. U.S. Pub. 2002/0182497 in view of Armand et al. U.S. Pub. 2004/0033360.

With respect to claims 1 & 2, Kohzaki teaches a method of making a cathode for a lithium secondary battery. The ferric phosphate compound has a basic structure of LiFePO_4 . The material is obtained by mixing a lithium source, an iron compound and a phosphorus source, and calcining the mixture from 600°C to 750°C. See the Abstract.

Art Unit: 1745

Concerning iron metal, Kohzaki suggests using iron metal because it is an abundant resource and less expensive (par. 6). With respect to grinding the mixture in claim 2, Kohzaki teaches mixing the materials by ball milling (par. 43). With respect to claim 3, the phosphate source is ammonium dihydrogenphosphate (par. 39). As to claim 4, conductive carbon is added to the ferric phosphate (par. 42). As to claim 5, the phosphate material is employed in a lithium secondary battery (par. 48).

Kohzaki does not expressly disclose mixing the starting materials in a solution (claims 1 & 2) or grinding the mixture (claim 2).

Armand teaches a method of making ferric phosphate, by mixing stoichiometric quantities of each source in water using ball milling to grind the mixture (par. 165).

Kohzaki and Armand are analogous because they are from the same field of endeavor, namely, fabricating ferric phosphate compounds.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ water taught by Armand, in the mixture of Kohzaki, to facilitate homogenous mixing. Furthermore, Kohzaki teaches that the raw materials do not have to be in solid powder form (par. 43) and therefore, suggests that solutions may be used.

As to grinding the mixture, Armand teaches the equivalence of ball milling and grinding (par. 165). Therefore, although Kohzaki teaches ball milling, it would be obvious to one of ordinary skill in the art at the time the instant invention was made to substitute grinding of Armand, with ball milling of Kohzaki, because of their known equivalence in the art.

Art Unit: 1745

With respect to the employment of iron metal, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ iron metal in the Kohzaki phospahte, in stead of iron compounds, because Kohzaki suggest using iron metal because it is an abundant resource and less expensive.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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9/23/06

Application/Control Number: 10/531,191

Page 5

Art Unit: 1745



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER